

LETTER TO THE EDITOR

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Letter to the editor: additional considerations for giant pituitary adenoma resection strategy

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To the editor

We read with interest the recently published retrospective cohort study “Giant invasive pituitary adenomas: surgical approach selection paradigm and its influence on the outcome—case series” by Dr. Saad, et al. highlighting the persistent role in the treatment algorithm for a transcranial approach for *giant* pituitary adenomas, as present frequently in our low-resource setting in rural Kenya. In our center, we have been learning firsthand the difficulties surrounding maximum safe resection of giant adenomas. We remain humbled by the reality of the challenges in decompressing the optic apparatus, minimizing tumor burden to prevent recurrence, preserving pituitary and hypothalamic functions, and stewarding patient resources in what can be a very expensive undertaking, even in charitable low- and middle-income country (LMIC) hospitals.

We are grateful to the authors for illustrating in the African setting the importance of including a transcranial approach in the treatment plan for many of these giant adenomas. Although the endonasal approach has become the widespread method of complete resection in many areas of the world over the past two decades, in sub-Saharan Africa, where pituitary adenomas are the second most common brain tumor, the endoscopic endonasal approach (EEA) was only adopted in our center

about two years ago [1, 2]. EEA adoption in LMIC settings remains relatively lower in comparison with high-resource academic centers where the EEA continues to be refined to ever-higher heights of efficacy [2, 3].

We have come to better understand the reasons for this reticence in applying EEA to every pituitary adenoma. First, the learning curve for surgeons and assistants for the EEA can be steep, and adoption is more likely to occur at any given institution if that institution has staff who have been trained in the approach, to avoid post-operative complications like cerebrospinal fluid leaks and hypopituitarism [2–4]. Second, the capital resources required to purchase and maintain necessary endoscopic equipment and to train individuals on its use and handling are high [3]. Third is the fact that pituitary tumors tend to present later in their course in LMIC due to a variety of social and economic factors [5]. This means that tumors tend to be larger, of a firmer consistency, and more densely adherent to critical structures such as the Circle of Willis and the pituitary gland and hypothalamus by the time a neurosurgeon becomes involved. Fourth is the significant expense of MRI facilities and intraoperative navigation leading to a dearth of these capabilities in sub-Saharan Africa [6].

To illustrate one of our humbling experiences, we reference a recent case of a 50-year-old woman who presented to an eye clinic with 5 years of progressive bilateral visual deficits and was referred to our neurosurgery clinic. She arrived to us 11 months later with complete right eye blindness and the ability to count fingers up to 1 m away in the left eye and was found on CT scan with contrast to have a giant pituitary adenoma (Fig. 1).

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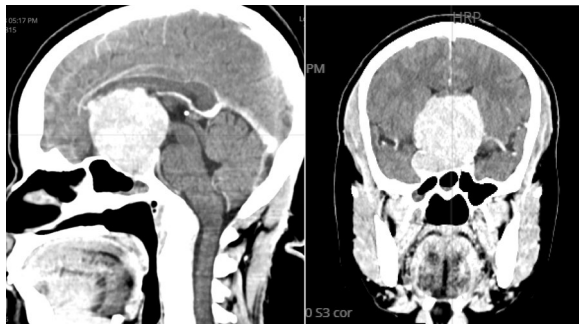


Fig. 1 Sagittal (left) and coronal (right) contrasted CT views of giant pituitary adenoma as can frequently present in LMIC centers without MR capabilities. In many LMIC settings, adequate MR sequences are not readily available to delineate the location of functional pituitary gland

In this patient, a right-sided frontotemporal-orbitozygomatic transcranial approach was utilized upfront instead of an endonasal approach due to tumor extension lateral to the right carotid, and as part of our desire to minimize her costs to a single surgery instead of two. However, complete resection was not safely possible due to the extreme firmness of the fibrous tumor and our lack of an ultrasonic aspirator. As such, we corroborate the findings of Dr. Saad et al. and others whereby larger, more invasive tumors tend to be of a consistency that is more difficult to resect, leading to higher rates of partial resection and recurrence [7]. It is important for neurosurgeons in our settings to consider upfront the common necessity of a multi-staged approach.

In our experience at a neurosurgery center in rural Western Kenya, we find many of the points brought up by Dr. Saad et al. to be true regarding giant pituitary adenomas that favor keeping the transcranial approach firmly in the armamentarium to supplement or at times usurp the EEA. We agree that in many cases patients should be consented for the likelihood of a two-stage approach, which is ironically unfortunate in that it is often the patients who already have fixed deficits and who are least able to afford medical care who may require the most resource-intensive treatments. In addition, our LMIC setting adds a host of socioeconomic challenges to routine utilization of the EEA as a standalone approach. These challenges are faced in LMIC settings all over the world and we appreciate the attention drawn to this persistent challenge for neurosurgeons operating in LMIC settings where giant adenomas present regularly.

Abbreviations

LMIC Low- and middle-income country
EEA Endoscopic endonasal approach

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